CLAIMS

1. (Currently Amended) A method for assembling a plurality of magnet segments on an interior surface of a cylindrical back ring for incorporation in a permanent magnet electric motor, the magnet segments each having an arcuate outer surface substantially conforming to the curve of the interior ring surface and being arranged in circumaxially spaced relationship on the interior surface of the ring when assembly is complete; the method comprising the steps of releasably securing the magnet segments on the exterior surface of an expandable and contractible fixture in the desired circumaxially spaced arrangement, providing an adhesive tape and an application means and applying the adhesive from the tape sequentially to the magnet segments by rotating the fixture relative to the adhesive applying means effecting relative axial movement between the fixture and the segments thereon and an axially aligned back ring to enter the former to a desired position within the ring, expanding the fixture to press the magnet segments firmly into engagement with the interior ring surface and thereby bonding the magnets to the surface, and contracting the fixture and again effecting relative axial movement between the ring and the fixture and magnet segments to remove the latter from the interior of the ring.

2. (Canceled)

3. (Currently Amended) A method for assembling a plurality of magnet segments on an interior surface of a cylindrical back ring as set forth in claim 1 [[2]] wherein each of the magnet segments is provided with a flat interior surface and the fixture has corresponding flat exterior mounting surfaces for the segments thus insuring that the segments are properly positioned on the fixture.

4. (Currently Amended) A method for assembling a plurality of magnet segments on an interior surface of a cylindrical back ring as set forth in claim 1 [[2]] wherein the tape applying means takes the form of an application roller with the tape

extending between the roller and the segments with its adhesive in engagement with the magnets.

5. (Original) A method for assembling a plurality of magnet segments on an interior surface of a cylindrical back ring as set forth in claim 4 wherein the adhesive tape takes the form of an adhesive transfer tape having a liner which is separated from the adhesive as it is applied to the segments.

6. (Original) A method for assembling a plurality of magnet segments on an interior surface of a cylindrical back ring as set forth in claim 5 wherein a take-up roller is provided with the liner extending to and about the same after separation from the adhesive, said roller being rotatably driven to pull the tape from the tape applying roller.

7. (Original) A method for assembling a plurality of magnet segments on an interior surface of a cylindrical back ring as set forth in claim 5 wherein a drive motor is provided for rotating the fixture, and wherein the tape application roller is resiliently urged against the tape and segments to apply the adhesive thereto.

8. (Currently Amended) A method for assembling a plurality of magnet segments on an interior surface of a cylindrical back ring as set forth in claim 1 [[2]] and including the added step of over molding the back ring and the magnet segments in an injection molding process.

Claims 9 thru Claims 18 unelected claims, decision re: filing of divisional application.

9. (Non-Elected – Decision Pending re: Divisional) Apparatus for assembling a plurality of magnet segments on an interior surface of a cylindrical back ring for incorporation in a permanent magnet electric motor, the magnet segments each having an arcuate outer surface substantially conforming to the interior surface of the back ring, comprising an expandable and contractible fixture adapted to receive and hold the

magnet segments in the desired circumaxially spaced arrangement with their exterior surfaces exposed, a supply of adhesive tape, a means for applying the adhesive sequentially to the magnet segments, a means for entering the fixture and magnet segments into the interior of the back ring and pressing the segments bearing adhesive against the interior surface of the back ring by expanding the fixture and thus bonding the magnet segments to the back ring and contracting the fixture to enable withdrawal of the fixture from the ring and segments.

10. (Non-Elected – Decision Pending re: Divisional) Apparatus for assembling a plurality of magnet segments on an interior surface of a cylindrical back ring for incorporation in a permanent magnet electric motor as set forth in claim 9 wherein a means for rotatably driving the fixture is provided, and wherein the fixture is thus rotated to apply adhesive sequentially to the magnet segments.

11. (Non-Elected – Decision Pending re: Divisional) Apparatus for assembling a plurality of magnet segments on an interior surface of a cylindrical back ring for incorporation in a permanent magnet motor as set forth in claim 10 wherein said adhesive applying means takes the form of an application roller about which an adhesive tape extends and a means for resiliently urging the roller toward the magnet segments.

12. (Non-Elected – Decision Pending re: Divisional) Apparatus for assembling the adhesive a plurality of magnet segments on an interior surface of a cylindrical back ring for incorporation in a permanent magnet electric motor as set forth in claim 11 wherein the adhesive tape takes the form of an adhesive transfer tape having a liner which is separated from the adhesive as it is applied to the segments.

13. (Non-Elected – Decision Pending re: Divisional) Apparatus for assembling a plurality of magnet segments on an interior surface of a cylindrical back ring for

incorporation in a permanent magnet electric motor as set forth in claim 12 wherein a rotatably driven take-up roller is provided to receive the liner after separation of the same from the adhesive.

14. (Non-Elected – Decision Pending re: Divisional) Apparatus for assembling a plurality of magnet segments on an interior surface of a cylindrical back ring for incorporation in a permanent magnet electric motor as set forth in claim 10 wherein axial locating surfaces are provided on the fixture and wherein a device is provided at an opposite end of the fixture to urge the magnet segments against said surfaces and thereby precisely locate the same axially.

15. (Non-Elected – Decision Pending re: Divisional) Apparatus for assembling a plurality of magnet segments on an interior surface of a cylindrical back ring for incorporation in a permanent magnet electric motor as set forth in claim 10 wherein a vacuum means is provided for releasably securing the magnet segments on the fixture.

16. (Non-Elected – Decision Pending re: Divisional) Apparatus for assembling a plurality of magnet segments on an interior surface of a cylindrical back ring for incorporation in a permanent magnet electric motor as set forth in claim 15 wherein individual grippers are provided respectively for each magnet segment to assist the vacuum means in properly positioning the magnet segments on the fixture.

17. (Non-Elected – Decision Pending re: Divisional) Apparatus for assembling a plurality of magnet segments on an interior surface of a cylindrical back ring for incorporation in a permanent magnet electric motor as set forth in claim 10 wherein the fixture includes a collet like device operable to expand and force the magnet segments against the interior surface of the back ring, and thereafter operable to contract and release the same.

18. (Non-Elected – Decision Pending re: Divisional) Apparatus for assembling a plurality of magnet segments on an interior surface of a cylindrical back ring for incorporation in a permanent magnet electric motor as set forth in claim 14 wherein an axially movable rotatable turret is provided and carries said device for urging the segments axially and a gripping device for holding a back ring, said turret being rotated and moved axially to alternately urge segments axially against their respective axial locating surfaces and to place a back ring about a fixture loaded with adhesive carrying segments.

19. (Non-Elected – Decision Pending re: Divisional) A method for assembling a plurality of magnet segments on an interior surface of a cylindrical back ring for incorporation in a permanent magnet electric motor, the magnet segments each having an arcuate outer surface substantially conforming to the curve of the interior ring surface and being arranged in circumaxially spaced relationship on the interior surface of the ring when assembly is complete; the method comprising the steps of releasably securing the magnet segments on the exterior surface of an expandable and contractible fixture in the desired circumaxially spaced arrangement, providing an adhesive tape and an application means and applying the adhesive sequentially to the magnet segments effecting relative axial movement between the fixture and the segments thereon and an axially aligned back ring to enter the former to a desired position within the ring, expanding the fixture to press the magnet segments firmly into engagement with the interior ring surface and thereby bonding the magnets to the surface, and contracting the fixture and again effecting relative axial movement between the ring and the fixture and magnet segments to remove the latter from the interior of the ring.